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A Small Collection of Amphibians from Thailand

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Abstract

A small collection of amphibians made at middle and northern Thailand is examined. It includes seven species: *Ichthyophis* sp., *Rana limnocharis*, *R. rugulosa*, *R. macrodactyla*, *Ooeidozyga lima*, *O. magnapustulosus* and *Microhyla ornata*. Brief notes on these species are given with reference to their morphological variations, sexual characters, and reproductive conditions.

Dr. Tsuneaki KOBAYASHI, a former associate member of the Center for Southeast Asian Studies of Kyoto University has entrusted me with his collection of amphibians from Thailand. This collection was made in September 1974, mostly at Supahan Buri province and town of Mae Sai.

The result of the examination of the collection will be briefly described in the present paper. More detailed descriptions of the species treated herein are in TAYLOR's monograph (The amphibian fauna of Thailand, 1962).

The specimens treated in the present paper are now in my collection at the Biological Laboratory, Yoshida College, Kyoto University.

Species Accounts

Ichthyophis sp. Fig. 1

Chiang Rai, near Mae Sai, 1 adult (sex undetermined).

The specimen measures: snout-vent length (SVL) 325 mm; tail length 5.5 mm, tail length in total length 60 times; body width 14 mm, body width in total length 23.6 times; primary and secondary folds 326.

The teeth are in four series: premaxillary-maxillary 15–16; prevomeropalatine 13–14; dentary 15–15; splenial 12–13.

The specimen has continuous light yellowish stripe from a point below the eye back to near vent level and most resembles with "*I. kohtaoensis* subsp?", which was briefly described by TAYLOR (1962), but differs from the latter in dentition and body proportions.

"*I. kohtaoensis* subsp?" has about the same number of body folds (289–320) and splenial teeth (12–14) with this specimen, but has more numerous teeth on the upper two and dentary series. Further, it has shorter tail than in the present specimen. From *I. kohtaoensis*, the present specimen differs in having fewer numbers of teeth on all the four series of teeth row and fewer body folds (362–366 in *kohtaoensis*), though they agree in body proportions.

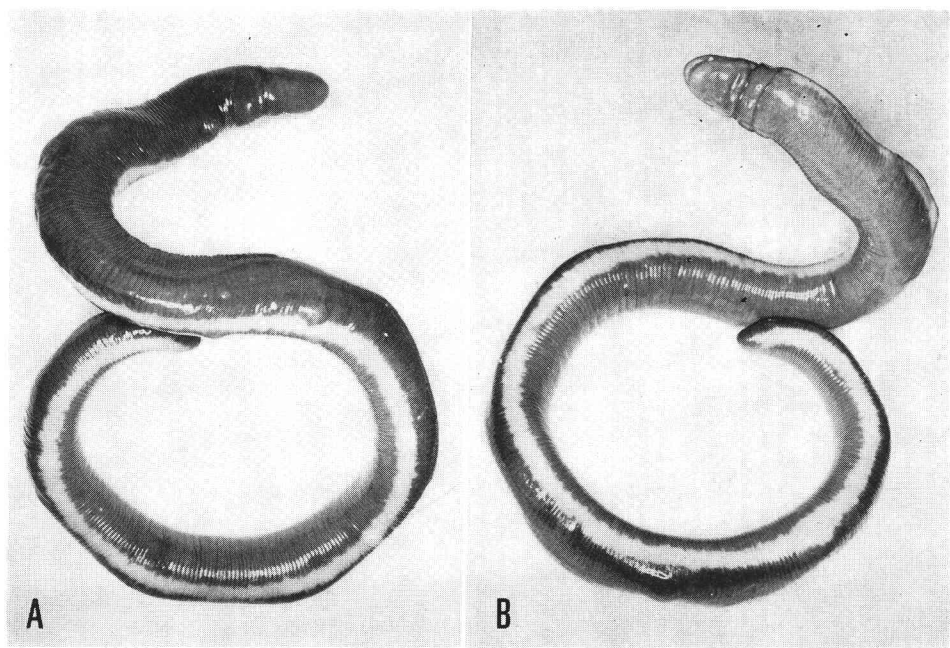


Fig. 1. Dorsal (A) and ventral (B) views of *Ichthyophis* sp. Actual Total L 330.5 mm.

As has been stated by TAYLOR (1968), actual teeth count is considerably difficult. There might be mistakes in my counting, but the number of splenial teeth almost equaled to that of “*I. kohtaoensis* subsp?” , suggesting the presence of actual differences in the remaining three series between the latter form and my specimen.

After suggesting the occurrence of “*I. kohtaoensis* ssp?” on mainland (TAYLOR, 1962), TAYLOR mentioned only briefly on that form in the description of *I. kohtaoensis* from Koh Tao Island in his monograph of caecilians (TAYLOR, 1968). No further information is available on his taxonomic treatment of mainland relative of *kohtaoensis*.

Pertinent identification of the present specimen requires more detailed informations on striped forms of *Ichthyophis* of mainland.

The specimen was obtained from the roadside ditch along flooded paddy fields.

***Rana limnocharis limnocharis* BOIE** Fig. 2

Supahan Buri, 3 females + 2 young males + 2 young females + 1 young (sex undetermined).

Table 1. Measurements (in mm) and ratios to SVL of *Rana limnocharis limnocharis*.

	N	SVL		HW		TL	
		Range	Mean	Range	Median	Range	Median
Y.	1		21.7		.336		.488
♂ Y.	2	29.6-30.9	30.3	.317-.338	.328	.416-.498	.457
♀ Y.	2	34.4-38.5	36.5	.322-.337	.330	.483-.525	.504
♀ Ad.	3	47.2-53.2	51.0	.324-.346	.336	.508-.582	.564

Of the eight specimens examined, one has broad and five have narrow mid-dorsal light stripe. The remaining two lack this (Fig. 2). Thus, 75% of the present small sample of *limnocharis* possess vertebral stripe; almost the same frequency as was previously reported (see discussions in KURAMOTO, 1968).

Mature females contain small unpigmented ova, indicating their non-breeding conditions. The males are immature, lacking secondary sex characters.

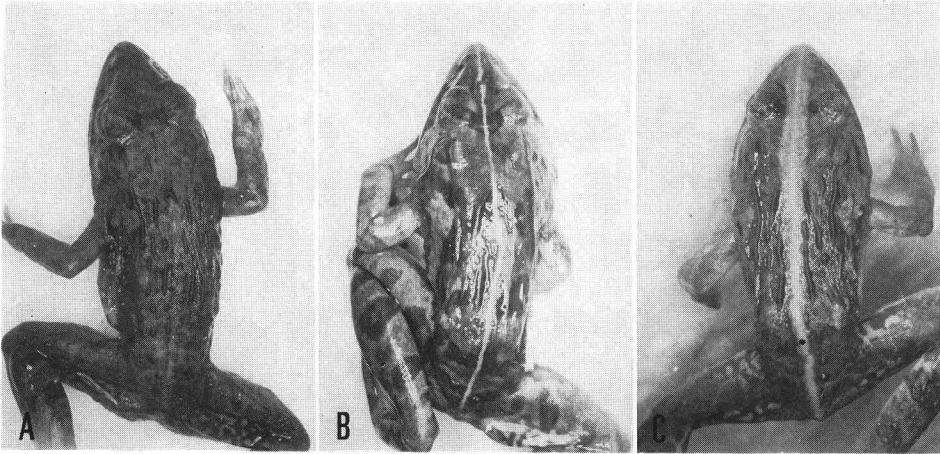


Fig. 2. Dorsal views of *Rana limnocharis limnocharis*, showing variations in vertebral stripe: (A) stripe absent, (B) narrow, and (C) wide stripe. Actual SVL (A) 38.5, (B) 52.6, and (C) 53.2 mm.

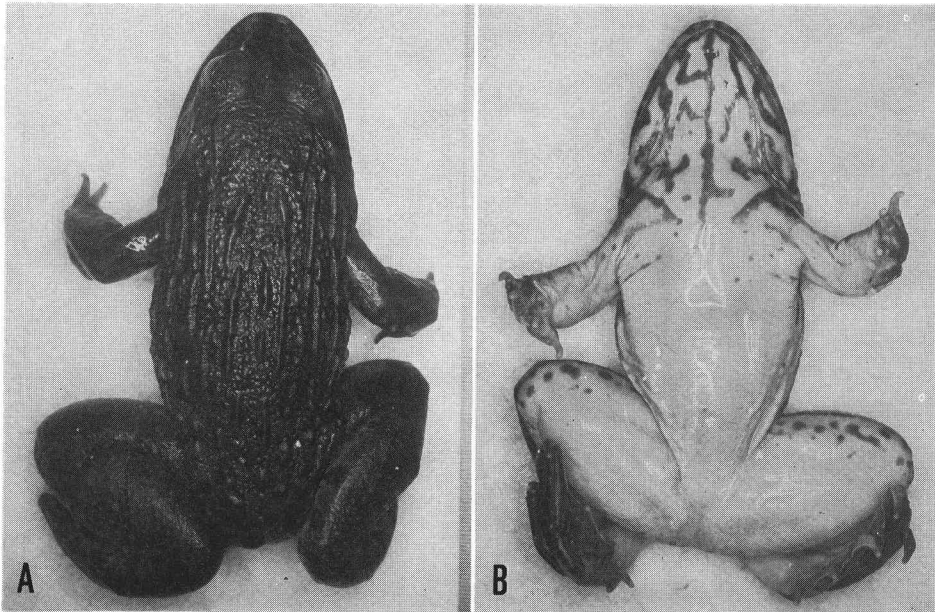


Fig. 3. Dorsal (A) and ventral (B) views of *Rana rugulosa*, male. Actual SVL 115.7 mm.

***Rana rugulosa* WIEGMANN** Fig. 3

Supahan Buri, 1 male.

The male measures: SVL 115.7 mm; head width (HW) 0.328 of SVL; tibia length (TL) 0.454 of SVL.

No marked differences are yet detected between this male and samples from Taiwan and Borneo, except in size; no specimen from the latter localities at hand are found to reach 110 mm in SVL.

Taxonomic relations of forms of *R. tigerina* complex (BOULENGER, 1920) are yet insufficiently realized. Alike the treatment of Chinese population by POPE (1931), I tentatively identify the present specimen as *R. rugulosa* instead of *tigerina pantherina*, since no clear differences are found between the two in the descriptions of TAYLOR (1962). More detailed field survey is needed to clarify their relations.

***Rana macrodactyla* (GÜNTHER)** Fig. 4

Supahan Buri, 1 male + 2 females.

The male measures: SVL 25.9 mm; HW 0.286 of SVL; TL 0.556 of SVL. The females measure: SVL 28.9 and 32.2 mm; HW 0.270 and 0.276 of SVL; TL 0.502 and 0.488 of SVL, respectively.

As to the secondary sex characters in this species, several discussions have been made. While BOULENGER (1920) could not find nuptial pad, LIU (1936) reported the presence of that organ in Chinese specimens. Recently, ROMER (1979) reported the

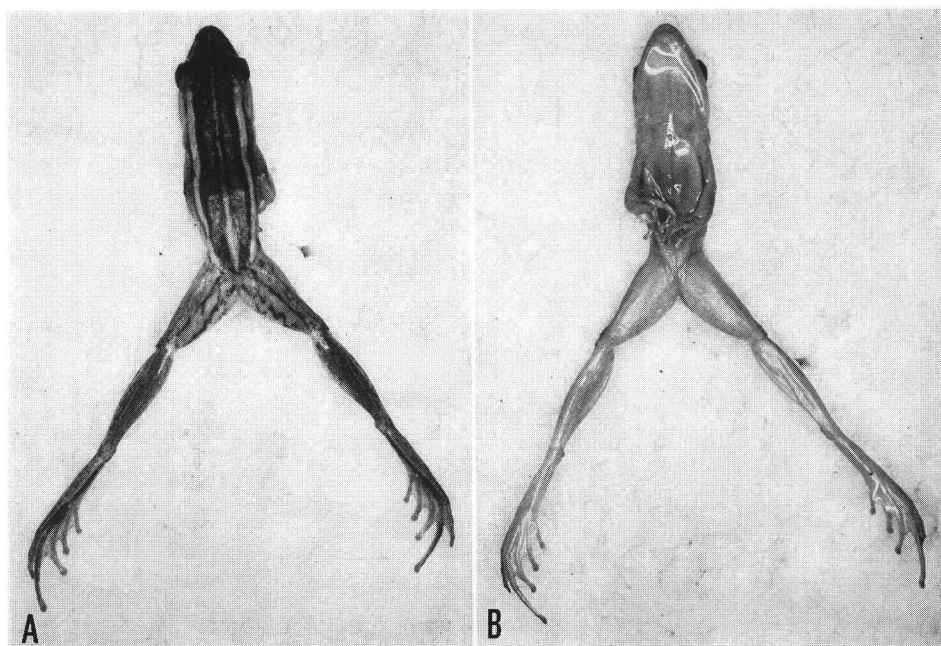


Fig. 4. Dorsal (A) and ventral (B) views of *Rana macrodactyla*, male. Actual SVL 25.9 mm.

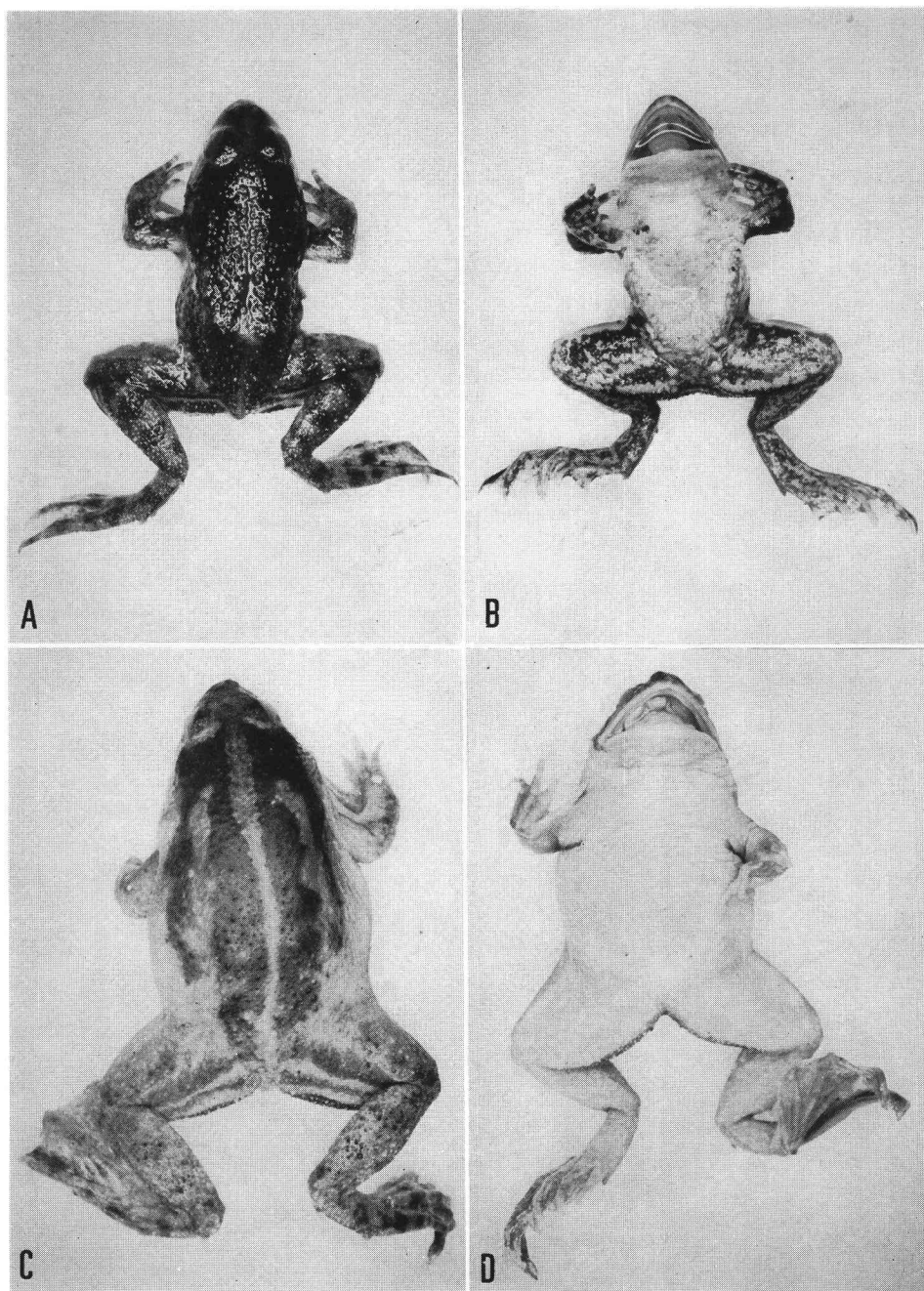


Fig. 5. Dorsal (A, C) and ventral (B, D) views of *Oeidozyga lima*. Top, male, actual SVL 24.9 mm. Bottom, female, 31.8 mm.

presence of nuptial pad in Hong Kong (type locality of the species) population.

The present male has nuptial pad comprised of yellowish white fine spinules covering the dorsal and median surfaces of the first finger from its base to the level of the subarticular tubercle, and beyond the latter point the pad continues to the terminal phalanx as a narrow strip. Anterior fourth of the lower jaw is covered with fine asperities in the male. The tympanum is about equal length with eye in the male, much larger than in the females, the situation reported by Liu (op. cit.). Vocal sac openings are absent.

The females have large pigmented ova.

The three specimens were collected on grassy bank of a large river.

***Ooeidozyga lima* KUHL and VAN HASSELT** Fig. 5

Supahan Buri, 2 males + 1 female + 1 young male + 1 young female.

The mature males have indistinct nuptial pad on the medial and dorsal surfaces of the first finger, and vocal slits near each side of the mouth.

The mature female has large pigmented ova, measuring 0.9 mm in diameter.

***Ooeidozyga magnapustulosus* (TAYLOR and ELBEL)** Fig. 6

Supahan Buri, 2 males.

The males measure: SVL 20.5 and 21.3 mm; HW 0.371 of SVL in both; TL 0.449 and 0.451 of SVL, respectively.

The two males, collected with *O. lima*, differ from the latter species in many respects. They have the following characteristics: tongue with rounded tip (*Phrynoglossus* of TAYLOR, 1962); tympanum visible through skin; tips of toes blunt, lacking marked disks; web extending to tip of toes, no deep incision; remnant of webs present between fingers and webbing is most developed between first and second fingers; back covered with craterlike warts, some of which have white tips.

These are characteristics of *Phrynoglossus magnapustulosus* described by TAYLOR (1962), though the pustules in these males are more poorly developed than in specimens described in TAYLOR (op. cit.).

TAYLOR could not find nuptial pad and vocal slits in his male specimen, but in the present two specimens, these secondary sex characters are evident. Light yellowish

Table 2. Measurements (in mm) and ratios to SVL of *Ooeidozyga lima*.

	N	SVL		HW		TL	
		Range	Mean	Range	Median	Range	Median
♂ Y.	1		12.8		.391		.461
♀ Y.	1		25.6		.367		.449
♂ Ad.	2	19.6-24.9	22.3	.361-.372	.367	.442-.469	.456
♀ Ad.	1		31.8		.311		.418

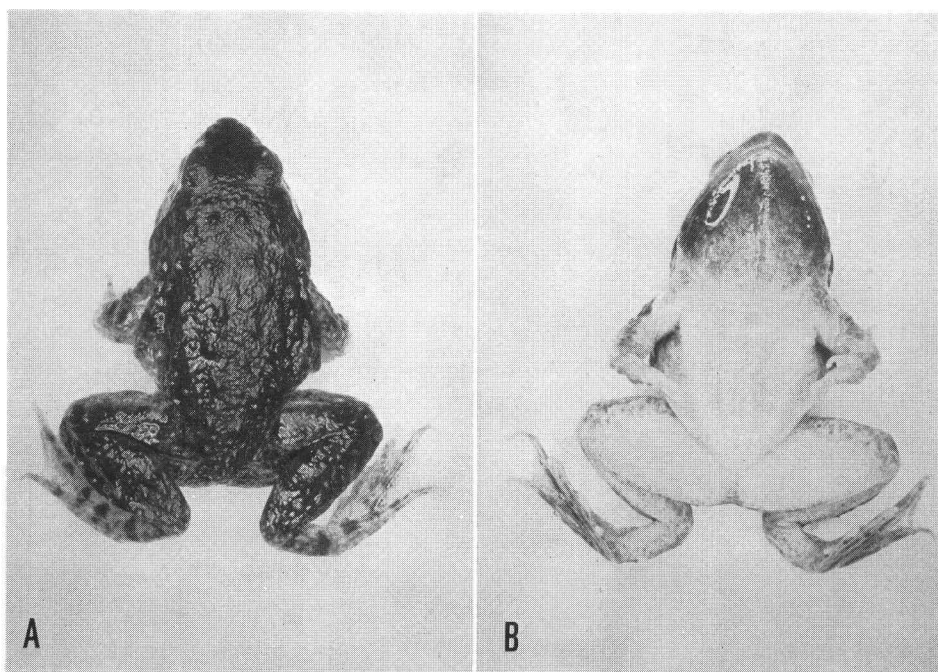


Fig. 6. Dorsal (A) and ventral (B) views of *Ooeidozyga magnapustulosus*, male. Actual SVL 21.3 mm.

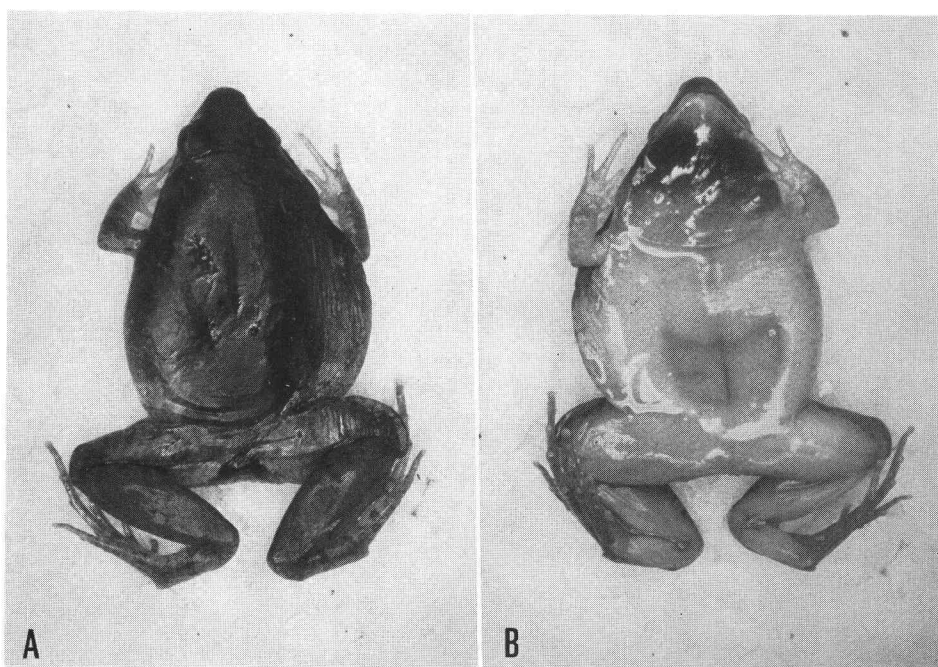


Fig. 7. Dorsal (A) and ventral (B) views of *Microhyla ornata*, male. Actual SVL 19.4 mm.

nuptial pad is well developed on the first finger and vocal openings are present in front of each corner of the mouth. The throat is heavily pigmented unlike males of *O. lima*.

Apparently, TAYLOR (1962) examined younger specimens and the development of pustules commented above is probably related with sexual maturity of males.

In assigning genus name *Ooeidozyga* to the present specimens, I followed INGER's treatment (INGER, 1954, 1966).

***Microhyla ornata* (DUMÉRIL and BIBRON) Fig. 7**

Supahan Buri, 1 male.

The male measures: SVL 19.4 mm; HW 0.320 of SVL; TL 0.505 of SVL.

The male has two large vocal slits on the floor of the mouth. The latter half of the throat is densely pigmented. Nuptial pad is absent.

Acknowledgments

I thank Dr. Tsuneaki KOBAYASHI of our laboratory for generously giving me the collection made by him. Mr. Yasuhiko SHIBATA of the Osaka Museum of Natural History and Mr. Tatsuo TAKIZAWA of Shinshu University enabled me to access to important literature. I am very grateful to them.

Literature Cited

- BOULENGER, G. A. 1920. A monograph of the South Asia, Papuan, Melanesian, and Australian frogs of the genus *Rana*. Rec. Indian Mus. 20: 1-226.
- INGER, R. F. 1954. Systematics and zoogeography of Philippine Amphibia. Fieldiana. (Zool.) 33: 181-531.
- . 1966. The systematics and zoogeography of the amphibia of Borneo. *Ibid.* 52: 1-402.
- KURAMOTO, M. 1968. Studies on *Rana limnocharis* BOIE. II. Geographic variation in external characters. Bull. Fukuoka Univ. Educ. (III) 18: 109-119.
- LIU, C. C. 1936. Secondary sex characters of Chinese frogs and toads. Field Mus. Nat. Hist., Zool. Ser. 22: 115-156.
- POPE, C. H. 1931. Notes on amphibians from Fukien, Hainan, and other parts of China. Bull. Amer. Mus. Nat. Hist. 61: 397-611.
- ROMER, J. D. 1979. Annotated checklist with keys to the adult amphibians of Hong Kong. Mem. Hong Kong Nat. Hist. Soc. 15: 1-14.
- TAYLOR, E. H. 1962. The amphibian fauna of Thailand. Univ. Kansas Sci. Bull. 43: 265-599.
- . 1968. The caecilians of the world. Univ. Kansas Press, Lawrence.

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